Division of Water Resources / State Revolving Fund Loan Program
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FINDING OF NO SIGNIFICANT IMPACT
Approval of Facilities Plan
Camden (Benton County), Tennessee
Loan No. SRF 2014-336

February 17, 2016

The National Environmental Policy Act requires federally designated agencies to determine whether a proposed major agency action will significantly affect the environment. One such major action, defined by Section 511(c)(1) of the Clean Water Act, is the approval of a facilities plan prepared pursuant to Title VI of the Clean Water Act. In making this determination, the State Revolving Fund (SRF) Loan Program assumes that all facilities and actions recommended by the plan will be implemented. The state's analysis concludes that implementing the plan will not significantly affect the environment; accordingly, the SRF Loan Program is issuing this Finding of No Significant Impact (FNSI) for public review.

The City of Camden has completed the facilities plan entitled "WWTP Improvements, Phase 2: Land Application System" dated April 2015. The facilities plan provides recommendations for the wastewater treatment system serving the City of Camden. This project includes the addition of a wastewater treatment plant effluent land application site while still maintaining the existing NPDES discharge permit. The total estimated project cost is $9,834,000. A Clean Water State Revolving Fund (CWSRF) loan in the amount of $9,834,000 has been requested for this project.

Attached is an Environmental Assessment containing detailed information supporting this proposed action. Comments supporting or disagreeing with this proposed action received within 30 days of the date of this FNSI will be evaluated before we make a final decision to proceed.

If you wish to comment or to challenge this FNSI, send your written comment(s) to:

Mr. Sam R. Gaddipati, Environmental Manager
Division of Water Resources, State Revolving Fund Loan Program
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312 Rosa L. Parks Avenue, Nashville, TN 37243

or call or e-mail (615) 532-0462 or sam.gaddipati@tn.gov.

ENVIRONMENTAL ASSESSMENT

Camden (Benton County), Tennessee
Loan No. SRF 2014-336

February 17, 2016

A. PROPOSED FACILITIES AND ACTIONS; FUNDING STATUS

The City of Camden has completed the facilities plan entitled "WWTP Improvements, Phase 2: Land Application System" dated April 2015. The facilities plan provides recommendations for the wastewater treatment system serving the City of Camden. This project includes the addition of a wastewater treatment plant (WWTP) effluent land application site while still maintaining the existing NPDES discharge permit. The total estimated project cost is $9,834,000. A Clean Water State Revolving Fund (CWSRF) loan in the amount of $9,834,000 has been requested for this project. The facilities planning area and project location are indicated on Figure No. 1 of this Environmental Assessment. Descriptions of the proposed facilities and actions included in this project are listed below:

TREATMENT FACILITIES The City of Camden proposes to add a land application disposal method for treated WWTP effluent. With this addition, the City will be able to discharge to the present NPDES permitted discharge site, Cypress Creek, or land apply the treated effluent on approximately 340 acres of land. The land application system will consist of an effluent pumping station at the existing WWTP, equipment to regulate the method of discharge (Cypress Creek or land application); approximately 4.7 miles of force main; and a treated effluent irrigation system.

FUNDING STATUS

The facilities described above comprise the scope of Loan No. SRF 2014-336 scheduled for funding in fiscal year 2016. The estimated project costs are summarized in the following tabulation:

PROJECT CLASSIFICATIONS	COSTS ($)
Administrative & Legal	160,000
Land Costs & Appraisals	850,000
Planning Fees	450,000
Design Fees	500,000
Engineering Basic Fees	60,000
Other Engineering Fees	130,000
Resident Inspection	269,000
Construction	7,395,000
Miscellaneous	20,000
TOTAL	9,834,000
CWSRF Loan	9,834,000

The City of Camden has applied for a $9,834,000 Clean Water State Revolving Fund loan.

B. EXISTING ENVIRONMENT

The City of Camden's Planning Area is located in Benton County in the western part of Tennessee. Existing environmental features are described below:

SURFACE WATERS

Surface waters within the proposed planning area include Cypress Creek and its tributaries Cane, Charlie, and Burnside Creeks. Cypress Creek is the main surface stream and is classified for fish and aquatic life, recreation, irrigation, livestock, watering and wildlife for its entire length. Cane Creek is classified for use by fish and aquatic life, irrigation and livestock watering, and wildlife. Cane Creek is a tributary to Cypress Creek at mile 16.2. The City of Camden supplies drinking water to the Camden Planning Area. Raw water is obtained from a surface water intake on the Tennessee River.

GROUNDWATER

Groundwater is available throughout the planning area in sufficient quantities for individual water supplies. Available data indicate that the chemical quality of this water is good. The availability of potable water from the Camden water system has virtually eliminated the use of water from individual supplies within the city limits and in most of the planning area.

SOILS

The soils of the planning area fall into four categories: the Dickson-Dulac-Mountview, Bodine Mountview, Collins-Waverly-Lobelville, and the Dulac-Cuthbert associations. The soils along Cypress Creek and its tributaries are of the Collins-Waverly-Lobelville type which are deep, nearly level, mixed silty and sandy bottom soils. The Waverly soils comprise 45% of the planning area and are gray, poorly drained and have the greatest flooding potential. Collins soils comprise 25% of the planning area and are imperfectly drained. They are brownish gray consisting of mixed alluvium including cherty limestone, loess, and coastal plain materials. The remaining soils are well-drained with local alluvial soils found at the feet of slopes. The Bodine-Mountview soils are hilly well-drained cherty silt loam/cherty silty clay loam underlain by cherty limestone. The Dulac-Cuthbert soils are moderately well-drained fragipan soil of shallow loess underlain by plastic clays. The Dickson-Dulac-Mountview are well-drained soils underlain by compact clays high in shrink-swell potential and with low percolation rates.

TOPOGRAPHY

The City of Camden's Planning Area is bounded by Burnside, Charlie, Cane, and Cypress Creeks in the western valley of the Tennessee River Basin. The terrain is generally hilly with an average elevation of approximately 368 feet above mean sea level.

OTHER ENVIRONMENTAL FEATURES

No wild or scenic rivers or unique, scientific, or natural areas exist in the planning area. The flood plain of the Tennessee River (Kentucky Lake) extends up Cypress Creek. Flood control is exercised by the Tennessee Valley Authority through a series of dams.

C. EXISTING WASTEWATER FACILITIES

The City of Camden owns and operates a 0.5 million gallons per day (MGD) wastewater treatment plant serving the Camden city limits which was placed into operation in January 1990 and is the only WWTP in the planning area. The WWTP consists of an influent pumping station, two facultative lagoon cells, outlet control structure, chlorine injection point, chlorine contact chamber, effluent flow meter, chlorine storage/chlorinator building, one hydrograph controlled release (HCR) lagoon cell, floating discharge control weir, weir control building, an outfall line

to Cypress Creek, and a combination operations/laboratory/workshop building. Facultative cell #1 contains two mixer/aerators, cell #2 has one mixer/aerator. The primary function of the HCR lagoon is to allow the discharge to be restricted when the flow in the receiving stream is low and the ability of the stream to accept the discharge is limited. As stream flow increases, the stream's capacity to assimilate the discharge increases, and treatment plant flow previously stored in the HCR lagoon can be released to the receiving stream.

The influent pump station is a triplex, centrifugal, suction lift type with two standard duty pumps and one high duty pump. Flow from the influent pumping station is routed to facultative cell #1. Cell #1 has a surface area of approximately 22 acres at its typical operating depth of 5 feet. Detention time in this cell at the design flow rate of 0.5 MGD is approximately 64 days. The partially treated wastewater from Cell #1 flows to Cell #2. Facultative Cell #2 has a surface area of approximately 15 acres at its typical operating depth of 5 feet. Detention time in this cell at the design flow rate of 0.5 MGD is approximately 42 days. Treated wastewater from Cell #2 flows to the HCR cell via the outlet control structure, through the chlorine injection point, chlorine contact chamber, and effluent flow meter. The chlorine contact chamber is sized to provide thirty minutes of detention time. Effluent from the chlorine contact chamber flows to the HCR cell which has a surface area of approximately 26 acres at its typical operating depth of 6 feet. Discharge from the HCR cell to the receiving stream is controlled by a floating weir which rises and falls in accordance with a monitoring gage placed in the receiving stream. A rating table is included in the existing NPDES permit which stipulates HCR discharge verses receiving stream flow.

Sludge and solids limits have not been a problem for the existing Camden WWTP. The WWTP does not have a history of permit excursions related to floatable or settleable solids. A recent survey of the lagoon bottoms has indicated an insignificant buildup of solids in the vicinity of the lagoon influent pipe; therefore, a sludge management plan has not been needed.

The City’s existing collection system ranges in size from 8-inch to 18-inch diameter pipes with approximately 120,000 linear feet (LF) being 8-inch, approximately 3,000 LF is 6-inch, approximately 12,000 LF is 10-inch, approximately 6,000 LF is 12-inch, and approximately 2,000 LF is 18-inch. The wastewater collection system was initially installed in 1928, and approximately 75% of the system is clay and concrete pipe with the newer pipes being PVC. The collection system also contains 13 sewage lift stations.

The Camden WWTP discharges treated effluent from its outfall location into the Cypress Creek at River Mile 12.8.

The WWTP currently operates under the National Pollutant Discharge Elimination System (NPDES) Permit No. TN0064611 that includes the following parameters and effluent limitations:

PARAMETER	EFFLUENT LIMITATIONS
$CBOD_5$	35 milligrams per liter (mg/l)
Suspended Solids	100 mg/l
E. coli	126/100 colonies per milliliter
Dissolved Oxygen	5.0 instantaneous minimum
Ammonia as N	5.0 mg/l
Chlorine Residual, Total	0.19 instantaneous maximum
Settleable Solids	1.0 daily maximum (milliliter/liter)
pH	6.0-9.0 (Standard Units)

D. NEED FOR PROPOSED FACILITIES AND ACTIONS

The existing Camden WWTP has exceeded its design period. A new NPDES permit for discharge to the low flow stream Cypress Creek was issued to the Camden facility on May 1, 2009. The permit contained more stringent limits for ammonia and metals as well as revised maximum stream flow and dilution ratios for the HCR system which controls the release of treated WWTP effluent. The new permit has caused the City to be in violation of its NPDES discharge permit. The permit violations have resulted in a new sewer tap moratorium until the WWTP returns to reliable permit compliance. This project will allow an increase to the WWTP discharge flow rate. Currently the NPDES permit allows a 0.5 MGD discharge to Cypress Creek. The City plans to keep the existing NPDES permit and obtain an additional 1.5 MGD land application permit (SOP-15022). The purpose of the dual discharge permit would be to allow the City to pump to the land application site if the lagoon storage capacity were exceeded and/or low creek flows would not allow a discharge to Cypress Creek. When conditions allow, the preferred method of discharge will remain the discharge of least cost, which is the 0.5 MGD discharge to Cypress Creek.

Existing and projected facility conditions are shown in the following table:

EXISTING AND PROJECTED FACILITY CONDITIONS

POPULATION	EXISTING (2015)	PROJECTED (2035)
City/UD	3,582	3,323
% Sewered	99%	99%
Total Planning Area	3,582	3,323
% Sewered	99%	99%

CITY/UD WWTP FLOWS	EXISTING (2015)	PROJECTED (2035)
Domestic/Commercial	270,000	250,000
Industrial	40,000	37,000
Infiltration/Inflow (during rainfall events)	920,000	828,000
TOTAL	1,230,000	1,115,000

Per the draft State Operating Permit (SOP-15022) offered for public notice on December 14, 2015, planning standards for Camden's proposed land application site have been established and are listed below:

PARAMETER	EFFLUENT LIMITATIONS
BOD_5	45 milligrams per liter (mg/l)
NH3-N	Report
E coli	941 colonies/100 milliliter
Flow	Report

E. ALTERNATIVES ANALYSIS

Several alternatives, including a "No-action" alternative, were evaluated for treated wastewater management in the April 2015 facilities plan. A summary discussion of the evaluation of each alternative for WWTP treated effluent discharge and the selection of the recommended plan follows:

NO ACTION

The "No-action" approach was not a viable alternative. The WWTP is currently unable to meet NPDES discharge permit limits relating to the Cypress Creek discharge. A Consent Order has been issued that mandates the City go forward with a solution, therefore, some action must be taken to protect the environment and public health, and this alternative was rejected.

NEW WASTEWATER TREATMENT PLANT

A new WWTP would be designed for an average daily flow of 1.5 MGD. The new WWTP would consist of an influent pump station, influent screen, grit removal, flow monitoring system, biological treatment units, disinfection system, SCADA system, emergency generator, and solids handling/dewatering units. A high degree of treatment would be required to meet the discharge permit limits for this amount of flow into Cypress Creek. This alternative was not the most cost-effective and was rejected.

EXISTING WWTP UPGRADE WITH DISCHARGE TO KENTUCKY LAKE/TENNESSEE RIVER

This alternative would consist of optimizing the existing WWTP and making upgrades to treat 1.5 MGD to meet discharge limitations. The treated effluent discharge location would be moved from Cypress Creek to the main channel of the Kentucky Lake impoundment of the Tennessee River. The treated wastewater would be pumped from the existing WWTP location via a new effluent pump station and force main to a diffusion structure in the river. This was not the most cost-effective alternative and was rejected.

EXISTING WWTP UPGRADE WITH TWO DISCHARGE OPTIONS—CYPRESS CREEK OR LAND APPLICATION

This alternative would consist of optimization of the existing WWTP (nearing completion) and keeping the existing Cypress Creek discharge and adding a land application site for treated WWTP effluent. When conditions are appropriate for a Cypress Creek discharge such as high flow conditions, the more economical gravity discharge to Cypress Creek would be used. During low creek flows, the WWTP effluent would be pumped via force main to the land application site. This is the most cost-effective alternative and is selected.

F. ENVIRONMENTAL CONSEQUENCES; MITIGATIVE MEASURES

The environmental benefits of this project will be elimination of permit violations and the improvement of water quality conditions in Cypress Creek.

During the construction phase, short-term environmental impacts due to noise, dust, mud, disruption of traffic, runoff of silt with rainfall, etc., are unavoidable. Minimization of these impacts will be required; however, many of these minimization measures will be temporary and only necessary during construction. Using the following measures to prevent erosion will minimize impacts on the environment:

1. Specifications will include temporary and permanent measures to be used for controlling erosion and sediment.
2. Soil or landscaping maintenance procedures will be included in the specifications.
3. The contractor will develop an Erosion Control Plan. It will contain a construction schedule for each temporary and permanent measure controlling erosion and sediment. It will include the location, type, and purpose for each measure and the times when temporary measures will be removed or replaced.

These measures, along with requiring the contractor to return the construction site to as-good-as or better-than its original condition, will prevent any adverse impacts due to erosion.

The state's Historic Preservation Officer has reviewed the project and has determined that the project will not impact known significant cultural resources.

No prime or unique agricultural lands were identified and therefore will not be adversely affected. No endangered species of flora or fauna were identified within the proposed construction corridor. Effects on flora and fauna will be confined and temporary.

G. PUBLIC PARTICIPATION; SOURCES CONSULTED

A Public Meeting was held on October 15, 2015, at 6:00 p.m., local time. The selected plan for wastewater treatment and user charges were described to the public, and their input was received. This agency is not aware of any unresolved public objections that may have been voiced before or after the public meeting regarding this project.

The annual median household income for the City of Camden is $23,340. The current sewer user rate for the typical residential user (5,000 gallons per month) will increase from $24.75 to $28.19 per month on July 1, 2016 and to $31.57 per month on July 1, 2017. The total incremental annual cost for this project is $81.84, which is approximately 0.35 percent of the current annual household median income.

Sources consulted about this project for information or concurrence were:

1. Tennessee Department of Agriculture
2. Tennessee Department of Economic and Community Development (ECD)
3. Tennessee Department of Environment and Conservation (TDEC), Division of Air Pollution Control (DAPC)
4. Tennessee Department of Transportation (TDOT)
5. Tennessee Historical Commission
6. TDEC, Division of Archaeology (DA)
7. Tennessee Geological Survey
8. TDEC, Division of Solid Waste Management (DSWM)
9. TDEC, Division of Water Resources (DWR)
10. Tennessee Wildlife Resources Agency (TWRA)
11. United States Army Corps of Engineers (USACE)
12. United States Fish and Wildlife Service (USF&W)
13. City of Camden
14. Benton County
15. Civil Infrastructure Associates

H. SPECIAL CONDITIONS

The State Revolving Fund loan agreement will have the following special condition:

1. The City of Camden shall obtain applicable Section 10/404 Permits from the U. S. Army Corps of Engineers to meet the requirements of wetlands protection and stream-crossing statutes. A letter from the Corps stating that the permits are not needed will obviate this requirement.